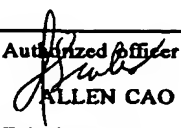


INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/14449

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) :G11B 5/147 US CL :360/126, 121, 122, 125, 119 According to International Patent Classification (IPC) or to both national classification and IPC														
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 360/126, 121, 122, 125, 119 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched NONE Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) NONE														
C. DOCUMENTS CONSIDERED TO BE RELEVANT														
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.												
X	US 4,839,763 A (MATSUZAWA) 13 June 1989, figure 1	1-20												
X	US 4,816,949 A (YAMADA et al) 28 March 1989, figure 3	1-20												
X	US 4,811,146 A (NIWA) 07 March 1989, figures 1 and 3-5	1-20												
X	US 4,819,113 A (KUBOTA et al) 04 April 1989, figures 1 and 5	1-20												
X,E	US 6,072,669 A (INDECK) 06 June 2000, figures 1, and 4-6	1-20												
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.														
<table border="0"><tr><td colspan="2">* Special categories of cited documents:</td></tr><tr><td>*A* document defining the general state of the art which is not considered to be of particular relevance</td><td>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td></tr><tr><td>*B* earlier document published on or after the international filing date</td><td>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td></tr><tr><td>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td><td>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td></tr><tr><td>*O* document referring to an oral disclosure, use, exhibition or other means</td><td>*A* document member of the same patent family</td></tr><tr><td>*P* document published prior to the international filing date but later than the priority date claimed</td><td></td></tr></table>			* Special categories of cited documents:		*A* document defining the general state of the art which is not considered to be of particular relevance	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	*B* earlier document published on or after the international filing date	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	*O* document referring to an oral disclosure, use, exhibition or other means	*A* document member of the same patent family	*P* document published prior to the international filing date but later than the priority date claimed	
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O document referring to an oral disclosure, use, exhibition or other means	*A* document member of the same patent family													
P document published prior to the international filing date but later than the priority date claimed														
Date of the actual completion of the international search 13 AUGUST 2000		Date of mailing of the international search report 18 SEP 2000												
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230		Authorized officer  ALLEN CAO Telephone No. (703) 305-3796												